

## CLAIMS:

1. A method of enhancing an audio signal, the method comprising the steps of:
  - selecting frequency ranges (I, II, ...) of the audio signal, each frequency range being capable of containing a respective signal having a signal level (L),
  - determining the signal level (L) in a first frequency range (I), and
  - 5 • if the signal level (L) in the first frequency range (I) exceeds a threshold value ( $L_{MAX}$  i):
    - decreasing the signal level in the first frequency range, and
    - increasing the signal level in a second frequency range (II) different from the first frequency range (I).
- 10 2. The method according to claim 1, wherein the second frequency range (II) is higher than the first frequency range (I).
3. The method according to claim 1 or 2, wherein the second frequency range (II)
- 15 is adjacent to the first frequency range (I).
4. The method according to claim 1, 2 or 3, wherein the step of increasing the signal level (L) in the second frequency range (II) comprises feeding part of the signal of the first frequency range (I) to the second frequency range (II).
- 20 5. The method according to claim 4, wherein feeding part of the signal of the first frequency range (I) to the second frequency range (II) comprises generating harmonics of the signal of the first frequency range.
- 25 6. The method according to any of the preceding claims, further comprising, if the signal level (L) in the first frequency range (I) exceeds a threshold value ( $L_{MAX1}$ ), increasing the signal level in a third frequency range (III) different from the first and the second frequency range.

7. The method according to any of the preceding claims, wherein, if the signal level in both the first (I) and the second frequency range (II) exceeds a respective threshold value ( $L_{MAX I}$ ,  $L_{MAX II}$ ), the step of increasing the signal level in the second frequency range is omitted.

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8. The method according to any of the preceding claims, further comprising the step of conditioning the audio signal prior to the step of selecting frequency ranges.

9. A device (1) for enhancing an audio signal, the device comprising:

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- filter means ( $4_1-4_N$ ) for selecting frequency ranges (I, II, ...) of the audio signal, each selected frequency range being capable of containing a respective signal having a signal level (L),
  - detection means ( $8_1-8_N$ ) for determining the signal level (L) in at least a first frequency range (I),
  - 15
  - control means (9, 10) for generating control signals ( $V_1- V_N$ ) in response to the signal level determined by the detection means, and
  - signal amplification/attenuation means ( $5_1...5_N$ ) for attenuating the signal of a respective frequency range in response to the said control signals ( $V_1- V_N$ ),

wherein the control means (9, 10) are arranged for:

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- determining whether the signal level (L) in the first frequency range (I) exceeds a respective threshold value ( $L_{MAX I}$ ) and, if this is true,
  - decreasing the signal level (L) in the first frequency range (I), and
  - increasing the signal level in a second frequency range (II) different from the first frequency range.

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10. The device according to claim 9, further comprising transfer means ( $12_1...12_N$ ,  $13_1...13_{N-1}$ ,  $14_1...14_{N-1}$ ,  $15_2...15_N$ ) for transferring part of the signal of the first frequency range (e.g. I) to the second frequency range (e.g. II).

30 11. The device according to claim 10, wherein the transfer means comprise a frequency shifting circuit ( $13_1...13_{N-1}$ ).

12. The device according to claim 11, wherein the transfer means comprise a first signal multiplier for multiplying the signal from the first frequency range with a first

coefficient ( $A_1 \dots A_{N-1}$ ) before feeding said signal to the respective frequency shifting circuit ( $13_1 \dots 13_{N-1}$ ).

13. The device according to claim 11 or 12, wherein the transfer means comprise a  
5 second signal multiplier for multiplying the frequency shifted signal from the first frequency range with a second coefficient ( $B_1 \dots B_{N-1}$ ) before feeding said signal to the second frequency range.

14. The device according to claim 12 or 13, wherein the control means (9, 10) are  
10 arranged for deriving the first coefficient ( $A_1 \dots A_{N-1}$ ) and/or the second coefficient ( $B_1 \dots B_{N-1}$ ) from the control signals ( $V_1 - V_N$ ).

15. The device according to any of claims 9-14, further comprising a conditioning  
filter (3) for conditioning the audio signal prior to selecting frequency ranges.

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16. An audio system comprising a device (1) according to any of claims 9 to 15.